L 23733-66 EWT(m) DIAAP JD/JG

ACC NR: AP6014812 SOURCE CODE: UR/0367/65/001/002/0201/0204

AUTHOR: Gromov, K. Ya.; Gnatovich, V.--Hnatowicz, V.; Danagulyan, A. S.; Strigachev, A. T.; Shpinel', V. S.--Shpinel, V. S.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy); Scientific Research Institute of Nuclear Physics, Moscow State University (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta) 029 14 13

TITLE: Two-hour (7.7 ksec) Lu sup 168 isomer 19

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 201-204

TOPIC TAGS: lutetium, isomer, beta decay

27

ABSTRACT: The electron conversion lines, previously ascribed (by Gromov and others, DAN SSSR, 136, 325, 1961) to the 87.5 KEV transition in the decay of a new Lu^{168} isomer ($T_{\frac{1}{2}}$ = 2.15 hours = 7.7 ksec) have been reinvestigated. It has been determined from the energy differences of the K, L_2, L_3, M_2, M_3, and N lines that these lines are connected with an 88.3 KEV transition in an Hf nucleus. Because of this, there is now no reason to suppose the existence of a two-hour Lu^{168} isomer, and the transition with an energy of 88.3 KEV is evidently due to beta-decay of an isomer state in Lu^{176}. Orig. art. has: 2 figures and 3 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 18Sep64 / ORIG REF: 003 / OTH REF: 002

Card 1/1

L 28954-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019088 SOURCE CODE: UR/0367/66/003/001/0008/0012

22

B

AUTHOR: Gnatovich, V.; Gromov, K.

ORG: Joint Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

19

TITLE: 'Collective' levels in odd-A deformed nuclei in the rare earth region

SOURCE: Yadernaya fizika, v. 3, no. 1, 1966, 8-12

TOPIC TAGS: deformed nucleus, rare earth element

ABSTRACT: Experimental data on "collective" levels in odd-A deformed nuclei in the rare earth region are reviewed. Orig. art. has: 1 figure and 2 tables. [JPRS]

27

SUB CODE: 20/ SUBM DATE: 08May65 / ORIG REF: 011 / OTH REF: 016

Card 1/1 BLG

L 26783-66 EWT(m)

SOURCE CODE: UR/0166/65/000/006/0056/0063

ACC NR: AP6017454

60

B

AUTHOR: Abdumalikov, A. A.; Abdurazakov, A. A.; Gnatovich, V.; Gromov, K. Ya.; Dzhelepov, B. S.

ORG: Joint Institute of Nuclear Research (Ob''yedinnyy institut yadernykh issledovaniy); Tashkent Polytechnic Institute (Tashkentskiy politekhnicheskiy institut)

TITLE: Investigation of conversion electron spectra of the isotopes Tu sup 166, Yb sup 164, Tu sup 164, and Tu sup 162

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 6, 1965, 56-63

TOPIC TAGS: conversion electron spectrum, ytterbium, thulium, constant magnetic field, isotope, spectrographic analysis, tantalum, synchrocyclotron, gamma transition, radioactive decay, proton

ABSTRACT: The conversion electron spectra of thulium 19 and ytterbium isotopes 17 were investigated with a beta spectrograph and a constant magnetic field. The samples were obtained by irradiating a tantalum target for 1-2 hours with 660 Mev protons in the synchrocyclotron of the Joint Institute of Nuclear Research. Film exposure usually began about 3 hours after irradiation. The electron conversion lines for Tu^{165}, Yb^{164}, Tu^{164}, and Tu^{162} are reliably identified and the results tabulated. Accuracy of gamma-transition energy determinations was about 0.1%, and that of intensity determinations was about 20% for strong lines and about 40% for weak lines. Previously

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L 26783-66

ACC NR: AP6017454

0

unknown gamma transitions were found having the energies 112.8, 215.9, 228.1, 238.4, 293.2, 389.3, 496.8, 543.9 and 703.0 Kev. Results of the study are discussed in detail, analyzed and compared with other published data. The decay schemes of Tu^{166} and Yb^{164} are diagrammed. The following gamma-transitions, arising during decay of Yb^{164} between the odd-odd levels of the Tu^{164} nucleus, were discovered for the first time: 37.5 (MI), 149.3, 164.5 (MI), 187.7 (MI), 190.3, 324.2, 327.3, 362.9 and 390.4 Kev. The intensities of these lines are discussed in detail, and conclusions reached are compared with those of other authors. Orig. art. has: 2 figures and 4 tables. [JPRS]

SUB CODE: 20 / SUBM DATE: 31Jul64 / ORIG REF: 008 / OTH REF: 007

Card 2/2 CC

BRABETS, V. [Brabec, V.]; KRATSIK, B.; KRATSIKOVA, T.; MILIGI, Z.;
VEYS, M.; MASHTALKA, A.; VOBETSKY, M.; GNATOVITSZ, V.

Radioactive radiation from neutron-deficient hafnium isotopes.
Izv.AN SSSR.Ser.fiz. 25 no.10:1266-1268 '61. (MIRA 14:10)

1. Institut yadernykh issledovaniy Chekhoslovatskoy Akademii nauk, Rzhezh, i Fakul'tet tekhnicheskoy i yadernoy fiziki ChVUT, Praga.
(Hafnium--Isotopes)

GNATOVSKIY, Nikolay Ivanovich, dotsent, kand.tekhn.nauk, inzh.-polkovnik; SHORIN, Pavel Aleksandrovich, inzh.-podpolkovnik; VIL'CHINSKIY, I.K., red.polkovnik; STREL'NIKOVA, M.A., tekhn.red.

[Evolution of small arms in Russia] Istoriia rzvitiia otechestvennogo strelkovogo oruzhiia. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 247 p. (MIRA 12:9)
(Firearms)

GNATOVSKIY, Vladimir [Hnatovs'kyi, Volodymyr] (s.Ivanivka na Vinnychchyni)

Along the bright road. Nauka i zhyttia 10 no. 11:30-32 N '60.
(MIRA 14:4)
(Vinnitsa Province—Collective farms)

GNATOVSKIY, V. I.

GNATOVSKIY, V. I. --"Investigation of Hydraulic Resistance and Heat Transfer in Ducts of Spiral Heat Exchangers." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Min of Higher Education USSR, Kiev Order of Lenin Polytechnic Inst, Faculty of Machinery and Apparatus for Chemical Manufacture, Kiev, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Candidate in Technical Sciences

CHERNOBYL'SKIY, I.I., doktor tekhn. nauk; GNATOVSKIY, V.I., kand. tekhn. nauk.

Hydraulic resistance and heat emission in tubes of spiral heat exchangers. Bum. prom. 33 no.4:9-12 Ap '58. (MIRA 11:4)
(Heat exchangers)

CHERNOBYL'SKIY, Iosif Il'ich, doktor tekhn. nauk, prof.; BONDAR', Alla Grigor'yevna, kand. tekhn. nauk, dots.; GAYEVSKIY, Boris Antonovich, kand. tekhn. nauk, dots.; GNATOVSKIY, Vasiliy Ivanovich, kand. tekhn. nauk, dots.; GORODINSKAYA, Sara Abramovna, kand. tekhn. nauk, dots.; IADIYEV, Rostislav Yakovlevich, kand. tekhn. nauk; TANANAYKO, Yuriy Marter'yevich, kand. tekhn. nauk, dots.; MIRGORODSKIY, Vasiliy Timofeyevich, inzh.; STABNIKOV, V.N., doktor tekhn. nauk, prof., retsenzent; SOROKA, M.S., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Machinery and apparatus of the chemical industry]Mashiny i apparaty khimicheskoi promyshlennosti. Pod red. I.I.Chernobyl'skogo. Moskva, Mashgiz, 1962. 521 p. (MIRA 16:2)
(Chemical engineering—Equipment and supplies)

[illegible]

Introduction of new equipment at the "[illegible]" plant. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.7:59-[illegible] Jl '64.

(MIRA [illegible])

GNATUSH, A.M.; GNATUSH, A.I.

Continuous operation diffuser. Patent U.S.S.R. 77,141, Dec.31, 1949.
(CA 47 no.19:9682 '53)

GNATUSH, A.M.; GNATUSH, A.I.

Apparatus for the visual control of the sugar-juice level in periodically operating saturation boilers. Patent U.S.S.R. 77,793, Dec.31, 1949. (CA 47 no.19:10255 '53)

GNATUSH, A.M.; GNATUSH, A.I.

Continuous operation diffuser. Patent U.S.S.R. 77,141, Dec.31, 1949.
(CA 47 no.19:9682 '53)

GNATUSH, A.M.; GNATUSH, A.I.

Apparatus for the visual control of the sugar-juice level in periodically operating saturation boilers. Patent U.S.S.R. 77,793, Dec.31, 1949. (CA 47 no.19:10255 '53)

CA GNATUSH, A M

28

Measuring tank for milk of lime. A. M. Gnatush *Sakharnaya Prom.* 25, No. 8, 18-22(1951). A measuring app. is described which automatically registers CaO in kg. used or % on the wt. of beets. The concn. of CaO in the milk of lime has no effect. V. R. Balkon

NAZAROV, Ivan Andreyevich; GHATUSH, A.M. [Hnatush, A.M.], otv. red.; FAL'KO, Yu.G. [Fal'ko, IU.H.], red.; ZELENKOVA, E.F. [Zelenkova, IE.F.], tekhn. red.

[Organization of fish ponds in collective farms] Organizatsiia stavkovoho hospodarstva v kolhospakh. Kyiv, 1961. 46 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.5, no.18) (MIRA 14:12)

(Fish ponds)

GNATUSHENKO, Vladimir

Eyes towards the flag. Voen. znan. 35 no.10:28-29 O '59.
(MIRA 12:12)

(World War, 1939-1945--Naval operations--Personal narratives)
(Torpedo boats)

GNATUSHENKO, V. (g.Zhdanov)

Family of steelworkers. Sov. profsoiuzy 16 no.18:22-24 S '60. (MIRA 13:10)

(Kil'dishov, Sergei Pavlovich)

GNATUSHENKO, V. (g.Zhdanov)

Ivan Tynda's joy. Sov.profsoiuzy 18 no.10:31 My '62.
(MIRA 15:5)

(Zhdanov--Steel industry)

FLEYSHMAN, N.P.; GNATIK$\overset{O}{I}$V, V.M.

Concentration of stresses near the spherical cavity of a heavily elastic semispace. Dop. AN URSR no.5:361-364 '54. (MIRA 8:7)

1. L'vivs'kiy derzhavniy universitet im. Iv. Franka. Predstaviv diysniy chlen AN URSR G.M. Savin. (Elasticity)

S/179/60/000/03/038/039
E081/E441

AUTHOR: Gnatykiv, V.N. (L'vov)

TITLE: Particular Solutions of the Equations of Hollow Spherical Shells Under the Action of Certain Partial Loads

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3, pp 186-189 (USSR)

ABSTRACT: The stress function $\varphi(x,y)$ and the deflection function $w(x,y)$ for hollow spherical shells satisfy the equations (1.1) or, in terms of the deflection only, Eq (1.3). The general solution of this equation is written in the form (1.4), where $\Phi(x,y)$ is a harmonic function, $w^o(x,y)$ a particular solution of the heterogeneous equation (1.5) and $w_1(x,y)$ the general solution of the homogeneous equation $\Delta\Delta w_1 + k^4 w_1 = 0$. In the paper, the particular solutions $w^o(x,y)$ and the corresponding particular solutions of the first equation (1.1) are obtained for the following loadings: Section 2: Concentrated force P applied at the point ξ, η: the solution satisfies (2.1) and is sought in the

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E081/E441

Particular Solutions of the Equations of Hollow Spherical Shells Under the Action of Certain Partial Loads

form (2.2). Inserting (2.2) in (2.1) leads to (2.3) with $F_1(\alpha)$ etc given by Eq (2.4) to (2.7). At the point of application of the load, the deflection is given by Eq (2.8) and the corresponding stress function is (2.9).

Section 3: A load P is applied, uniformly distributed round the circumference of a circle with its centre at ξ_0, η_0 (see figure, p 187). The deflection and stress functions are given by Eq (3.1). The integrals in these equations are evaluated by Gershgorin's theorem (Ref 3) to give Eq (3.2) outside the loading circle and (3.6) inside.

Section 4: The load P is uniformly distributed over the area of a circle of radius a, and with its centre at the point ξ_0, η_0. The deflection and stress functions are given by Eq (4.6) and (4.7) for the regions respectively outside and inside the loading circle. Where m is the bending moment acting per unit length of the circumference.

Card 2/3 Section 5: The load is uniformly distributed over the

GNATYKIC, V. A.

BOROVSKIY, P. V. PHASE I BOOK EXPLOITATION SOV/5206 25

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

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Transactions of the Conference (Cont.) SOV/6206

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

Card 2/14

GNATYKIVM V.N. (L'vov)

Particular solutions of equations of flat spherical shells subjected to the action of some partial loads. Izv.AN SSSR. Otd.tekh.nauk.Mekh.i mashinostr. no.3:186-189 My-Je '60. (MIRA 13:6)

(Elastic plates and shells)

L 21025-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m)-6 IJP(c) WW/EM/GS

ACCESSION NR: AT5024280 UR/0000/65/000/000/0057/0067

22
B+1

AUTHORS: Yarema, S. Ya. (L'vov); Gnatykiv, V. N. (L'vov)

TITLE: A study of the temperature distribution in sloped shells and plates with destructive boundary conditions on their surfaces

SOURCE: Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh konstruktsiy. 5th, Kiev. Teplovyye napryazheniya v elementakh konstruktsiy (Thermal stresses in construction elements); doklady nauchnogo soveshchaniya, no. 5, Kiev, Naukova dumka. 1965, 57-67

TOPIC TAGS: shell structure heating, shell, shell theory, temperature effect, temperature field, temperature stress

ABSTRACT: The mathematical modeling of the stationary temperature field for shells and plates is studied. The field is determined from the formula

$$t=p\frac{\cos p\gamma}{\sin p}T+\frac{p^2\sin p\gamma}{3(\sin p-p\cos p)}T_1,$$

where $p^2 = h^2\Delta - \frac{\partial}{\partial f}$, 2h is the shell thickness, Δ - the Laplace operator; $f = \frac{\tau}{a^2h^2}$ where τ is time, a is the coefficient of heat conduction; $\gamma = \frac{z}{h}$

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ACCESSION NR: AT5024280

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is a dimensionless coordinate along the shell thickness computed from its mean surface. T and T_1 are functions characterizing the temperature distribution along the thickness of the shell and are given by

$$T=\frac{1}{2}\int_{-1}^{1} t\,d\gamma,\quad T_1=\frac{3}{2}\int_{-1}^{1} t\gamma\,d\gamma.$$

Additional first, second, and third order boundary condition equations are given as shown in Table 1 on the Enclosure, where $L_i(p)$ are differential operators and ψ_i are the functions given. The discussion is limited to sloping shells whose mean surface follows Euclidean metrics. The authors seek to model the stationary temperature field which gives a solution of the equations

$$L_{11}(p)T+L_{12}(p)T_1=\Psi_1,$$
$$L_{21}(p)T+L_{22}(p)T_1=\Psi_2,$$

and of the fundamental field equation. The field is visualized as consisting of two components: 1) the temperature field in an infinite shell defined by surface boundary conditions, and 2) the temperature field defined by boundary conditions at surface contours on the shell. Interest is focused on problems wherein the

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ACCESSION NR: AT5024280

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field is completely defined by the first component. Such is the case for closed or infinite shells, or when the slope is so gentle that contours are far removed from the region of study. A solution for T and T_1 is derived and applied to certain cases. An approximation method for solving the heat conduction equation is developed. Temperature distribution curves are shown to indicate variation with heat conduction coefficient. The given approximation method applies except in cases where ψ_1 varies with large intensity. Orig. art. has: 2 figures, 2 tables, and 16 equations.

ASSOCIATION: none Soveshch [illegible] Convention [illegible]

SUBMITTED: 14May65 ENCL: 01 SUB CODE: [illegible]

NO REF SOV: 003 OTHER: 001

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L 21025-66

ACCESSION NR: AT5024280 ENCLOSURE: 01

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Table 1

Boundary conditions	L_{ij}	Ψ_i
Ist order	$L_{11} = L_{22} = p \operatorname{ctg} p; \; L_{12} = -L_{21} = \frac{1}{3}\frac{p^3}{1 - p \operatorname{ctg} p}$	$\Psi_1 = t_1$ $\Psi_2 = t_2$
IInd order	$L_{11} = L_{22} = p^3; \; L_{12} = -L_{21} = -\frac{1}{3}\frac{p^3 \operatorname{ctg} p}{1 - p \operatorname{ctg} p}$	$\Psi_1 = \frac{q_{n1}}{\lambda}$ $\Psi_2 = \frac{q_{n}}{\lambda}$
IIIrd order order	$L_{11} = p(\varepsilon_1 \operatorname{ctg} p - p); L_{12} = \frac{p^3 (p \operatorname{ctg} p + \varepsilon_1)}{3(1 - p \operatorname{ctg} p)}$ $L_{22} = p(\varepsilon_2 \operatorname{ctg} p - p); \; L_{21} = -\frac{p^3 (p \operatorname{ctg} p + \varepsilon_2)}{3(1 - p \operatorname{ctg} p)}$	$\Psi_1 = \varepsilon_1 t_1$ $\Psi_2 = \varepsilon_2 t_2$

Card 4/4 BK

GNATYSHAK, A. I.

Cancer in lupus vulgaris. Vest. vener., Moskva no.5:21-22
Sept-Oct 1951. (CLML 21:1)

1. Of the Department of Propedeutic Surgery (Head -- Prof.
G.P. Kovtunovich), L'vov State Medical Institute.

GNATYSHAK, A.Y.

Associated cancer and tuberculosis. Arkh. pat., Moskva 14 no.6:76-77 Nov-Dec 1952. (CLML 23:4)

1. Of the Clinic of General Surgery (Head -- Prof. G. P. Kovtunovich), L'vov Medical Institute, L'vov.

1. GNATYSHAK, A. I.

2. USSR (600)

4. Liver - Tumors

7. Cystadenoma of the liver, Vest. khir., 73, no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

GNATYSHAK, A.I.

Clinical aspect and pathological anatomy of molluscum contagiosum.
Vest.ven.i derm. no.2:55-56 Mr-Ap '54. (MLRA 7:4)

1. Iz kliniki propedevticheskoy khirurgii L'vovskogo meditsinskogo
institute. (Skin--Diseases)

GNATYSHAK, A.I. (L'vov, ul. Lenina, 151, kv. 5)

Clinical aspects and pathological anatomy of molluscum contagiosum. (MLRA 7:10)
Vest. khir. 74 no.5:73-74 Jl-Ag '54.

1. Iz kliniki propedevticheskoy khirurgii (zav. prof. G.P.Kovtunovich) L'vovskogo gosudarstvennogo meditsinskogo instituta.
(MOLLUSCUM CONTAGIOSUM,
clin. aspects & pathol.)

GNATYSHAK, A.I.

Cancer and tuberculosis problem of antagonism in both diseases.
Vop.onk. 1 no.2:49-53 '55. (MLRA 8:10)

1. Iz kliniki obshchey khirurgii (zav.prof. G.D.Kovtunovich)
L'vovskogo meditsinskogo instituta.
(NEOPLASMS, physiology,
antag. eff. of tuberc.)
(TUBERCULOSIS, physiology,
antag. eff. on cancer)

GNATYSHAK, A.I., kandidat meditsinskikh nauk

Goiter of the base of the tongue and of the linguo-thuroid duct.
Vest.khir.77 no.3:111-115 Mr -56. (MIRA 9:7)

1. Iz kafedry propedevticheskoy khirurgii (zav. - prof. O.P. Kovtunovich) L'vovskogo meditsinskogo instituta.
(GOITER
of base of tongue & of linguo-thyroid duct)

GNATYSHAK, A.I. (L'vov, ul. Lenina, d.151, kv. 5)

Experimental thyroid tumors and accompanying changes in some organs of internal secretion [with summary in English]. Vop.onk. 3 no.6: 659-666 '57. (MIRA 11:2)

1. Iz kafedry obshchey khirurgii (zav. - prof. O.P.Kovtunovich) i kafedry patologicheskoy anatomii (zav. - prof. Ye.I.Pal'chevskiy) L'vovskogo meditsinskogo instituta.
(THYROID GLAND, neoplasms
exper., accompanying pathol. of endocrine glands in rats)
(ENDOCRINE GLANDS, pathol.
in exper. cancer of thyroid in rats)

[illegible]

GNATYSHAK, A.I.

Lingual goiter. Sov.med. 21 Supplement:14 '57. (MIRA 11:2)

1. Iz kafedry propedevticheskoy khirurgii L'vovskogo meditsinskogo instituta.
(TONGUE--DISEASES) (GOITER)

GNATYSHAK, N.I., Doc Med Sci--(diss) "Cancer of the thyroid gland." L'vov, 1958. 31 pp (Len State Order of Lenin Inst for the Advanced Training of Physicians im S.M. Kirov. L'vov State Med Inst. Chair of Propaedeutic Surgery. Chair of Pathological Anatomy), 225 copies (KL,25-58,118)

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GNATYSHAK, A.I., kand.med.nauk (L'vov)

Metastasizing adenoma of the thyroid gland. Klin.med. 37 no.4:144-151 Ap '59. (MIRA 12:6)

1. Iz kafedry obshchey khirurgii (zav. - prof.G.P.Kovtunovich) i kafedry patologicheskoy anatomii (zav. - prof.Ye.I.Pal'chevskiy) L'vovskogo meditsinskogo instituta.
(THYROID GLAND, neoplasms
adenoma, metastasizing (Rus))

GNATYSHAK, A.I., dotsent (L'vov, ul. Lenina, d.151, kv.5)

Two cases of tumors of the carotid and jugular paraganglia.
Nov. khir. arkh. no.5:115-117 S-O '60. (MIRA 14:12)

1. Kafedra obshchey khirurgii (zav. - G.P.Kovtunovich) L'vovskogo meditsinskogo instituta.
(NERVOUS SYSTEM, SYMPATHETIC—TUMORS)

GNATYSHAK, A.I., doktor med.nauk; KUZNETSOVA, L.I.

Results of treating patients with lymphogranulomatosis. Vrach. delo no.12:77-79 D '60. (MIRA 14:1)

1. Kafedra propedevticheskoy khirurgii (zav. - prof. G.P. Kovtunovich) L'vovskogo meditsinskogo instituta.
(HODGKIN'S DISEASE)

GNATYSHAK, A. I. (L'vov, ul. Lenina, 151, kv. 5)

Tumors of the carotid paraganglia. Vop. onk. 6 no.12:71-75 '60.
(MIRA 15:7)

1. Iz kafedry obshchey khirurgii (zav. - prof. G. P. Kovtunovich)
L'vovskogo meditsinskogo instituta.

(CAROTID GLAND--TUMORS)

GNATYSHAK, A.I.

Tumors of the jugular paraganglion. Vop.onk. 7 no.11: 103-107 '61. (MIRA 15:5)

1. Iz kafedry obshchey khirurgii (zav. - prof. G.P. Kovtunovich) L'vovskogo meditsinskogo instituta.
(NECK--TUMORS)

GNATYSHAK, A.I., dotsent

Tumors of the jugular paraganglion. Zhur. ush., nos. i gorl. bol.
21 no.3:54-56 My-Je '61. (MIRA 14:6)

1. Iz kafedry propedevticheskoy khirurgii (zav. - prof. G.P. Kovtunovich) L'vovskogo meditsinskogo instituta.
(EAR—DISEASES) (NECK—TUMORS)

GNATYSHAK, Anatoliy Ivanovich, prof.; CHEREN'KO, M.P., red.;
POTOTSKAYA, L.A., tekhn. red.; CHUCHUPAK, V.D., tekhn. red.

[Cancer of the thyroid gland]Rak shchitovidnoi zhelezy. Kiev,
Gosmedizdat USSR, 1962. 174 p. (MIRA 15:8)
(THYROID GLAND—CANCER)

STUDZINSKIY, I.V.; GNATYSHAK, A.I.

Gavriil Parfentievich Kovtunovich; obituary. Vest.khir. no.5: 157-158 '62. (MIRA 15:11)
(KOVTUNOVICH, GAVRIL PARFENTIEVICH, d.1961)

GNATYSHAK, A.I., prof.; PODIL'CHAK, M.D., prof. (L'vov)

"Principles of the prophylaxis of malignant tumors" by I.T. Shevchenko. Reviewed by A.I.Gnatyshak and M.D.Podil'chak. Vrach.delo no.10:153-154 O '62. (MIRA 15:10)
(CANCER--PREVENTION)

GNATYSHAK, A. I.; GORILOVSKAYA, A. I.

"Irradiation and surgical treatment of cancer of the bladder."

to be presented at the Radiology Congress, Karlovy Vary,
Czechoslovakia, 10-14 June 63

GNATYSHAK, A.I., doktor med. nauk (L'vov, ul. Lenina, d. 151, kv.5)
KACHOROVSKIY, B.V., dotsent.

Bone hemangiomas. Vestn. khir. Grekov. 90 no.4:60-66 Ap'63

1. Iz kliniki obshchey khirurgii (zav. - prof. G.P. Kovtunovich) L'vovskogo meditsinskogo instituta.

PAL'CHEVSKIY, Ye.I.; GNATYSHAK, A.I.; DOTSENKO, N.S.; RUDNITSKAYA, A.Yu.

Prognostic importance of histochemical examinations in cancer of the breast. Vop. onk. 11 no.5:30-33 '65.

(MIRA 18:8)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. Ye.I.Pal'chevskiy i kafedry obshchey khirurgii (zav. - prof. A.I.Gnatyshak) L'vovskogo gosudarstvennogo meditsinskogo instituta (rektor - prof. L.N. Kuznenko).

LAVRUKHIN, G.M.; GNATYSHAK, N.N.

Technological processes of the manufacture of ceramic-metal friction disks. Avt. prom. 31 no.6:41-43 Je '65.
(MIRA 18:10)

1. TSentral'nyy nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni avtomotornyy institut.

GNATYSHENKO, G. I.

Gnatyshenko, G. I. -- "Study of a Diagram of Phase Conditions of Sulfide Systems of Copper-Zinc, Copper-Lead-Zinc, and Lead-Iron-Zinc." Cand Tech Sci, Inst of Metallurgy and Ore Dressing, Acad Sci Kazakh SSR, Alma-Ata 1953. (Referativnyy Zhurnal--Khimiya, No 1, Jan 54)

Category : USSR/Solid State Physics - Systems E-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1165

Author : Avitisyan, Kh. K., Gnatyshenko, G. I.
Title : Thermic and Metallographic Investigation of the PbS -- ZnS -- FeS System

Orig Pub : Izv. AN KazSSR, ser. gorn. dela, stroymaterialov i metallurgii, 1956, Vyp. 6, 11-25

Abstract : Thermal, microstructural, and chemical methods were used to study the diagram of the phase equilibrium of sulfides of Pb, Zn and Fe. The alloys employed heavy concentration of zinc sulfide of not more than 30%, such as could be encountered in lead matte. The sulfides of iron and lead were obtained by precipitation with sulfuric acid from a solution of zinc sulfate. Six sections were studied for 80 alloys. The projection of the trinary spatial diagram on the plane of concentration of the triangle was constructed. The isotherms of the liquidus were plotted. The resultant part of the diagram is of the type of diagrams representing full insolubility of the components in solid state. The projections of the lines of the binary eutectics were drawn. The trinary eutectic alloy corresponds to a composition 8.5% ZnS + 30% FeS + 61.5% PbS. The solidification temperature of the triple eutectic is 820°.

Card : 1/1

SOV/137-58-10-20413

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p9 (USSR)

AUTHORS: Milent'yeva, V.I., Gnatyshenko, G.I.

TITLE: The Phase Composition of Lead Sinters (O fazovom sostave svintsovykh aglomeratov)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str[illegible]a i stroymaterialov, 1957, Nr 5 (16), pp 104-111

ABSTRACT: An investigation of the mineralogical composition of the Pb sinter of the Chimkent Plant, of the following % composition: Pb 28-40, Zn up to 4, Cu up to 1, SiO_2 10-14, CaO 6-7.5, Fe 17-19, is made. The structure of the sinters investigated included some quantity of primary charge materials in the form of partially fused SiO_2 inclusions within a silicate binding, Fe ore, and limestone. In some cases the amount of primary SiO_2 in the sinter structure was as high as 8% (the total contents thereof in the charge being 13.6%). Fe oxides introduced into the sinter charge as a fluxing addition appear in the final sinter structure as magnetite, to a greater or lesser degree reoxidized to hematite, and also react with Pb to form Pb ferrites. The total amount of magnetite and Pb ferrites in the

Card 1/2

sinters investigated comes to 35-40 weight %. Some amount of Fe goes into the make-up of the silicate binder and also forms a solid solution with PbO. No sulfide and sulfate forms of Fe are found as independent phases; ~20% of the total Ca in the sinter is in the form of sulfate (up to 5% of the weight of the sinter), and subsequent hydration thereof results in a pronounced impairment of the strength of the sinter. The lead group of minerals, other than the Pb ferrites referred to above, are represented by metallic Pb, Pb silicates, and residues of primary galena (PbS) not adequately oxidized during the roasting period (up to 3 weight %). It is established that the silicate binder consists of Pb ortho and metasilicates ($2PbO\cdot SiO_2$, $PbO\cdot SiO_2$), and of glass as well. The total amount of binder, with allowance for Pb ferrites, is 30-40% (including 4-5% crystalline Pb silicates). The Pb silicates constitute the prime foundation for the formation of the melt as they come into being in the solid phase at temperatures as low as 650-700°C and fuse at 710-715°. An important role therein is also played by Pb ferrites melting at 700-750°. No sulfate compounds of Pb are seen in the sinter. Cu is present in the form of Cu_2S and CuS. In individual cases the presence of sphalerite (up to 1 weight %) is detected in the structure of the final sinter. Thus, in lead sinter, S is fixed chiefly in Pb sulfides and in Ca and Ba sulfates.

1. Sintered lead--Structural analysis 2. Sintered lead--Chemical properties

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Ye. V.

SOV/136-58-5-7/22

AUTHORS: Milent'yeva, V.I. and Gnaty~~shenko, G.I.~~

TITLE: Experiments on the Application of Oxygen in the Sintering of Lead Charges (Opyty po primeneniyu kisloroda pri aglomeratsii svintsovykh shikht)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 5, pp 38 - 44 (USSR)

ABSTRACT: After preliminary experiments had shown that a higher SO_2-concentration had practically no effect on the rate of oxidation of sulphides, the use of oxygen in the sintering of lead-smelting charges was studied at the institut metallurgii i obogashcheniya AN KazSSR (Institute of Metallurgy and Beneficiation of the Ac.Sc. KazSSR). 14-16 kg charges were sintered in a bon (Figure 1) provided with three thermocouples for measuring the temperature distribution down the charge. Two charges, typical of practice at the Ust'-Kamenogorsk Lead Works, were used with the following respective compositions: 32.3, 31.2% Pb, 2.5, 2.06% Cu, 7.09-6.6% Zn, 14.7, 18% Fe, 10.4, 10.9% SiO_2, 5.0, 4.1% CaO, 6.45, 5.9% S. Sinter strength was measured by the Gintsvetmet method and de-sulphurisation, productivity, yield of good sinter and sintering speed

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18(0)

SOV/31-59-3-11/14

AUTHOR: Gnatyshenko, G.I., Candidate of Technical Sciences

TITLE: An Outstanding Specialist-Metallurgist (Krupnyy spetsialist-metallurg)

PERIODICAL: Vestnik Akademii nauk Kazakhskoy SSR, 1959, Nr 3, pp 76-77 (USSR)

ABSTRACT: This article is a short biography of the Academician of the AS of the Kazakh SSR, Doctor of Technical Sciences, Professor Vasiliy Ivanovich Smirnov, on the occasion of the 60th anniversary of his birth. After professional training at the Leningrad Mining Institute, V.I. Smirnov worked at copper smelting plants in the Urals and directed the reconstruction and starting of the Karabashskiy medeplavil'nyy zavod (Karabash Copper Smelting Plant). From 1927 to 1930 Smirnov was chief metallurgist and acting director of the trust "Uralmed'". In 1927, Smirnov was in the United States and Canada, where he became acquainted with non-ferrous metallurgy there. In 1930, Smirnov was appointed a teacher at the

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An Outstanding Specialist-Metallurgist SOV/31-59-3-11/14

newly organized Ural'skiy institut tsvetnykh metallov (Ural Non-Ferrous Metal Institute) and later became a teacher at the Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute), where he now lectures. In addition to these activities, V. I. Smirnov has published about 15 monographies and manuals for students and scientists in the field of copper metallurgy and about 150 scientific works. There is 1 photograph.

Card 2/2

MILENT'YEVA, V.I.; GNATYSHENKO, G.I.

Effect of charge composition on the indices of lead concentrate sintering. Izv. AN Kazakh.SSR. Ser. met. obog. i ogneup. no.3: 86-93 '60. (MIRA 14:4)
(Lead—Metallurgy) (Sintering)

MILENT'YEVA, V.I.; GNATYSHENKO, G.I.

Some metallurgical properties of lead sinter. Izv. AN Kazakh.SSR.
Ser. met. obog. i ogneup. no.3:94-108 '60. (MIRA 14:4)
(Lead—Metallurgy) (Sintering)

SHUROVSKIY, V.G.; VLADIMIROV, V.P.; GNATYSHENKO, G.I.; KUROCHKIN, A.F.;
SHCHUROVSKIY, Yu.A.; ADSON, N.I.; GOLOVKO, V.V.

Some physicochemical properties of charges for and the products of the electric smelting of Dzhezkazgan copper concentrates. Izv.AN Kazakh.SSR.Ser.met., obog.i ogneup. no.1:8-13 '61. (MIRA 14:6)
(Dzhezkazgan—Copper—Electrometallurgy)

GNATYSHENKO, G.I.; POLYVYANNYY, I.R.

Leaching of arsenic out of Cottrell dusts by a solution of sodium sulfide. Izv. AN Kazakh. SSR. Ser. met., obog. i ogneup. no.3: 35-39 '61. (MIRA 15:1)

(Leaching) (Arsenic)

KERSHANSKIY, I.I.; VORONIN, I.S.; SAVRAYEVA, K.Ye.; GNATYSHENKO, G.I.; SHCHUROVSKIY, V.G.; SHOKOBAYEV, Sh.D.

Pilot plant testing of the electric smelting of high-silicon copper concentrates without previous roating. TSvet.met. 34 no.9:24-34 S '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov (for Kershanskiy, Voronin, Savrayeva). 2. Institut metallurgii i obogashcheniya AN KazSSR (for Gnatyshenko, Shchurovskiy). 3. Kazakhskiy politekhnicheskiy institut (for Shokobayev).
(Copper—Electrometallurgy)

GNATYSHENKO, G.I.; GALUZO, V.N.

Fusibility, microstructure and chemical stability of certain alloys in the system $Na_2O - SiO_2 - CaO - Al_2O_3$. Trudy Inst. met. i obogashch. AN Kazakh. SSR 4:158-169 '62. (MIRA 15:8)
(Alloys--Metallography) (Systems (Chemistry))

KERSANDKI, I.I. [Kershanskyy, I.I.]; VORONIN, I.S.; SVRAEVA, K.E. [Savrayeva, K.Ye.]; GNATISENKO, G.I. [Gnatyshenko, G.I.]; SCIUROVSKI, V.G. [Shchurovskiy V.G.]; SOKOBAEV, S.D. [Shokobayev, Sh.D.]

Semiindustrial research on the electromelting of the raw high-silicon copper concentrates. Analel matalurgie 16 no.1:51-63 Ja-Mr '62.

KUZHAKHMETOV, E.I.; MOTORNAYA, G.A.; [illegible] [illegible], [illegible]O, G.I.;
PRIMBETOV, M.D.

Chloride sublimation as applied to [illegible] ores from the Nikolayevska ore deposit. Trudy Alt. GMNII AN Kazakh. SSR 14:66-74 '63.
(MIRA 16:9)

(Nonferrous metals--Metallurgy)
(Sublimation (Physical sciences))

MIKHAYLOV, N.I.; GNATYSHENKO, G.I.; KIM, G.V.

Review of M.A. Abdeev's book "Complex metal mattes and their conversion."
TSvet. met. 36 no.12:83-86 D '63. (MIRA 17:2)

L 2323-66 EWT(d)/EWT(m)/EWP(w)/EPF(c)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/
EWP(z)/EWP(b)/EWP(1)/ETC(m) IJP(c) MJW/JD/WW/WB/EM

ACCESSION NR: AP5022408 UR/0369/65/000/004/0494/0498

AUTHOR: Karlashov, A. V.; Gnatyuk, A. D.; Tokarev, V. P. 51 48 B

TITLE: Effect of corrosive medium and stress concentrator on the endurance characteristics of V95 aluminum alloy

SOURCE: Fiziko-khimicheskaya mekhanika materialov, no. 4, 1965, 494-498

TOPIC TAGS: aluminum alloy, aircraft alloy 18, alloy fatigue strength, alloy fatigue life, alloy corrosion, sea water corrosion, alloy notch sensitivity, V95 aluminum alloy

ABSTRACT: 14 To determine the effect of combined action of stress concentrators 27 and aggressive media on the endurance characteristics of V95 aluminum-base alloy (1.5% Cu, 2.1% Mg, 0.3% Mn, 0.2% Fe, 0.07% Si, 5.8% Zn, and 0.2% Cr), smooth and notched (sharp notch 0.5 mm deep) specimens 10 mm in diameter, solution heat treated at 470 ± 5C and aged at 140 ± 5C for 16 hr, were subjected to rotating beam fatigue tests in air or in a 3% NaCl aqueous solution. The tests for $2\cdot10^7$ cycles showed that notched specimens have an endurance limit (4 dan/mm^2) 14

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ACCESSION NR: AP5022408

67% lower than that of smooth specimens (12.3 dan/mm^2) (see Fig. 1 of the Enclosure). The corrosive medium decreased the endurance limit of notched specimens by 16% over practically the entire investigated stress range. The effect of corrosive medium on the endurance limit of smooth specimens increased continuously with increased cycle number. At $N = 2 \cdot 10^7$ the endurance limit in corrosive medium was 72% lower than in air. It is noted that the effects of the stress concentrators and corrosive medium are not cumulative, so that the combined effect was only 5% greater than that of the stress concentrator. The fatigue life of V95 alloy was strongly affected by 3% NaCl solution in the entire investigated stress range. For example, the fatigue life decreased 70% at a stress of 24 dan/mm^2, and 50—60 times at a stress of 12.3 dan/mm^2. A V-notch decreased the fatigue life 10 times, compared with an unnotched specimen, and the decrease became more pronounced as the stress amplitude decreased. The combined action of stress concentrator and aggressive medium decreased the fatigue life of V95 alloy still more, but the total effect is not cumulative. In general, the action of a corrosive medium decreases the fatigue life appreciably more than the endurance limit.

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ACCESSION NR: AP5022408

2

This is an important factor, which should be considered in calculating the service life of aircraft parts with stress concentrators working in aggressive media. Orig. art. has: 3 figures and 3 formulas. [MS]

ASSOCIATION: Kiyevskiy institut grazhdanskoy aviatsii (Kiev Institute of Civil Aviation)

SUBMITTED: 27Feb65 ENCL: 01 SUB CODE: MM

NO REF SOV: 008 OTHER: 000 ATD PRESS: 4107

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L 2325-66

ACCESSION NR: AP5022408

ENCLOSURE: 01

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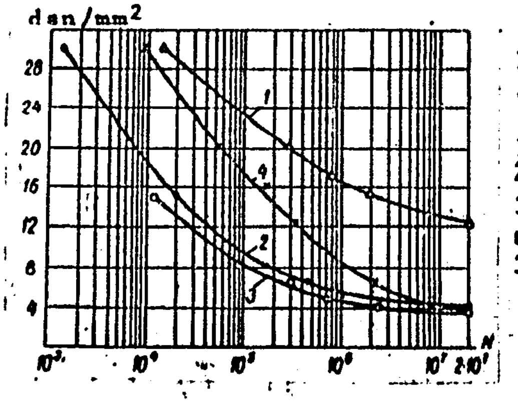

Fig. 1. Fatigue curves for V95 alloy

1 - Smooth specimens in air;
2 - notched specimens in air;
3 - notched specimens in 3% NaCL solution; 4 - smooth specimens in 3% NaCl solution.

Card 4/4 hd

L 41833-65 EWT(d)/EWT(m)/EWP(w)/EPF(c)/EWP(c)/EWA(d)/EWP(v)/SPR/T/EWP(t)/
EWP(k)/EWP(z)/EWP(b)/EWP(l) Pf-4/Ps-4 IJP(c) MJW/JD/WB

ACCESSION NR: AP5009277 S/0369/65/001/001/0007/0011

AUTHOR: Karlashov, A. V.; Gnatyuk, A. D.; Tokarev, V. P.

TITLE: Effect of corrosive and surface-active media on the endurance life of aluminum alloys

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 1, 1965, 7-11

TOPIC TAGS: aluminum alloy, alloy corrosion, alloy endurance limit, corrosive medium effect, surface active medium effect, endurance life, D16 aluminum alloy, V95 aluminum alloy

ABSTRACT: To determine the effect of corrosive and surface-active media on the endurance of D16 [U.S. 2024] and V95 [U.S. 7075] aluminum alloys, smooth cylindrical specimens of the alloys were subjected to fatigue tests for $20 \cdot 10^6$ cycles at a frequency of 6000 cps. The tests were made in water, 3% NaCl solution (imitating sea water), or an AMG-10 fluid, often used in aircraft hydraulic systems, activated by 2% oleic acid ($C_{17}H_{33}COOH$). A conditional failure probability P = 0.5% was used in the statistical processing of the obtained data. It was

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ACCESSION NR: AP5009277

found that all the media tested, particularly the corrosive media, significantly decrease the endurance limit of the tested alloys, and that the decrease depends on the aggressiveness of the medium and the test duration. For example, with $P = 0.5\%$, the endurance limit of D16 alloy was 10.0, 7.0, and 2.0 dan/mm^2 in air, water, and 3% NaCl solution, respectively. The corresponding figures for V95 alloy were 13.0, 7.0, 3.5 dan/mm^2, and 12.0 dan/mm^2 in AMG-10 fluid. Thus, in plain water the endurance limit of V95 alloy decreases more than that of D16 alloy, whereas the opposite is observed in 3% NaCl solution. The harmful effect of corrosive and surface-active media is much more pronounced on the service life of the alloys. In 3% NaCl solution at stresses close to the fatigue strength, the service life of V95 alloy was 70—80 times shorter, and that of D16 alloy was 50—60 times shorter, than in air. This drop in the service life is a very important factor in determining aircraft service life. Orig. art. has: 4 figures and 3 tables. [MS]

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L 41833-65

ACCESSION NR: AP5009277

ASSOCIATION: KIGA, Kiev

SUBMITTED: 12Aug64 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 000 ATD PRESS: 3235

Card 3/3

(N) L 13019-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c)

ACC NR: AP5028369 SOURCE CODE: UR/0369/65/001/005/0542/0547
MJW/JD/WB

65
64
B

AUTHOR: Karlashov, A.V.; Gnatyuk, A.D.; Tokarev, V.P.

ORG: Kiev Institute of Civil Aviation Engineers (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii)

TITLE: Fatigue strength and durability of aluminum alloys in corrosive media

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 5, 1965, 542-547

TOPIC TAGS: aluminum alloy, corrosion resistant alloy, fatigue strength, fatigue test, corrosion resistance, aircraft material, corrosion, durability, water, sodium chloride

ABSTRACT: This work presents some of the results of an investigation into the effect of corrosion media on the durability of the aluminum alloys D16ATV, D16AT, and V92, which are used in the aircraft building industry. The corrosive agents used were water and a 3% aqueous solution of NaCl. It is found that the NaCl solution at $N = 5 \times 10^6$ cycles reduces the resistance of the alloys studied by 36 — 40% at a failure probability of 50% and 0.5%, respectively. The decrease in alloy resistance to the effect of water amounts to 16 — 20% at a failure probability of 0.5%. The increase in the effect of the corrosive media on the endurance limit of V92 and D16ATV alloys occurs only on the sector of relatively high load ($N = 10^5 - 10^6$ cycles). A further

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L 13019-66

ACC NR: AP5028369

decrease in loads discontinues the increase in the effect of the corrosive media and remains almost constant. The ultimate strength of V92 alloy differs only slightly from that of D16ATV and D16AT; the endurance limit of V92, however, in air and in a corrosive medium is substantially higher than that of D16ATV and D16AT. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 11 / SUBM DATE: 27Feb65 / ORIG REF: 003

Card 2/2

[illegible]

Effect of corrosive and surface-active media on the resistance of aluminum alloys. Fiz.-khim. mekh. mat. 1 no.1:[illegible] '65.
(MIRA 19:1)

1. Kiyevskiy institut grazhdanskoy aviatsii. Submitted August 12, 1964.

KARLASHOV, A.V.; GNATYUK, A.D.; TOKAREV, V.P.

Fatigue strength and durability of aluminum alloys in corrosive media. Fiz.-khim. mekh. mat. 1 no.5:542-547 '65.

(MIRA 19:1)

1. Kiyevskiy institut inzhenerov grazhdanskoy aviatsii. Submitted Feb. 27, 1965.

ACC NR: AP6018609 SOURCE CODE: UR/0420/65/000/004/0098/0103

AUTHOR: Karlashov, A. V.; Gnatyuk, A. D.; Tokarev, V. P.

ORG: Kiev Institute of Civil Aviation Engineers (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii)

TITLE: Corrosion endurance of D16ATV sheet duralumin

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 4, 1965, 98-103

TOPIC TAGS: sheet metal, fatigue strength, sea water corrosion, aluminum alloy/ D16ATV aluminum alloy

ABSTRACT: Data are given from experimental studies of the corrosion resistance of D16ATV duralumin alloy which is widely used in aircraft construction. The corrosion media were fresh water and a 3% NaCl solution simulating sea water. The tests were done on a machine with a loading frequency of 200 cycles per minute on a test base of $5 \cdot 10^6$ cycles. The specimens were tested for fatigue under pure bending conditions to a given deformation. The specimens were made from 2.0 mm sheet duralumin. The chemical composition of the material is as follows (in %): 4.2 Cu, 1.6 Mg, 0.5 Mn, 0.3 Fe, 0.2 Si and 0.5 Zn. Analysis of the experimental results shows that the effect of the corrosive media depends on aggressiveness and the number of test cycles. The maximum reduction in the fatigue limit on a test base of $5 \cdot 10^6$ cycles was 15 and 42.5% in H_2O

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L 40793-66
ACC NR: AP6018609

and a 3% solution of NaCl respectively. The corresponding values for a test base of $2 \cdot 10^5$ cycles were 7 and 20% respectively. This increase in the effect of the medium on the fatigue limit of the alloy with an increase in the number of test cycles takes place in the range of maximum amplitude stresses. There is no further increase in this effect when these stresses are reduced. Agressive media have a greater effect on the durability of the material than on its fatigue strength. A probabilistic evaluation of the fatigue limits for aluminum alloys gives a more exact figure for the effect of corrosive media on the fatigue strength of the material for establishing the service life of structural elements subjected to the action of these media. Orig. art. has: 3 figures, 2 tables.

SUB CODE: 11, 20/ 01/ SUBM DATE: none/ ORIG REF: 006

Card 2/2 mcp

L 32938-66 EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JH/JD/WB

ACC NR: AP6020913 (N) SOURCE CODE: UR/0369/66/002/002/0170/0172 38

AUTHOR: Karlashov, A. V.; Gnatyuk, A. D. 36

B

ORG: Kiev Institute of Civil Aviation Engineers (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii) 18

TITLE: The effect of the method of supplying liquid aggressive media on corrosion resistance of aluminum alloy 21

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 2, 1966, 170-172

TOPIC TAGS: aluminum alloy, copper containing alloy, magnesium containing alloy, alloy fatigue strength, corrosion fatigue strength/D16 alloy 18

ABSTRACT: Specimens of D16T aluminum alloy (4% Cu, 1.29% Mg, 0.76% Mn, 0.3% Fe, 0.19% Si) were tested for corrosion fatigue in a 3% NaCl solution and in potable water. The test specimens were submerged in corrosive media in a watertight vessel, or wetted in air by a continuous jet, drops, or intermittent spray of the corrosive media. The fatigue test basis was $20 \cdot 10^6$ cycles; the frequency of cycles of stress was 6000 per min. The results of the tests in a 3% NaCl solution (see Fig. 1) show that complete submersion, i.e., restriction of oxygen, resulted in the highest decrease in the endurance limit of the alloy (curve 5). With increasing access of oxygen, the effect of a given corrosive medium on the endurance limit decreased

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L 04782-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/WB/JH

ACC NR: AP6023442 SOURCE CODE: UR/0369/66/002/003/0285/0290

36
33
B

AUTHOR: Karlashov, A. V., Gnatyuk, A. D.

ORG: Kiev Institute of Engineers of Civil Aviation (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii)

TITLE: Effect of certain factors of programmed loading on the service life of an aluminum alloy exposed to an aggressive medium

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 3, 1966, 285-290

TOPIC TAGS: ALUMINUM ALLOY, aluminum copper alloy, durability, corrosion resistance, cyclic load / D16T aluminum alloy

ABSTRACT: The article describes the experimental findings on the effect of certain factors of dynamic loading on the service life of the D16T aluminum alloy (4.0% Cu, 1.29% Mg, 0.76% Mn, 0.3% Fe, 0.19% Si) exposed to the air as well as to a corrosive medium (3% NaCl) simulating the action of sea water, and subjected to various load cycles in accordance with various loading programs (loads of 20-15 kg/mm^2 in air and 13.5-7.5 kg/mm^2 in 3% NaCl solution, i.e. overloads). These programs are of the "sawtooth" kind, representing a sequence

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L 04782-67
ACC NR: AP 6023442

3

of alternately increasing and decreasing loading levels. Findings: for the specimens tested in the 3% NaCl solution the number of loading cycles until fracture was only about one-half as high as that for the specimens tested in air. In the presence of a corrosive medium the accumulation of fatigue with exposure to transient loading regimes occurs more intensely. This apparently accounts for the much earlier appearance of cracks in the specimens exposed to 3% NaCl solution, even when the loading-stress levels are still much below the corrosion endurance limit of such specimens. Orig. art. has: 5 figures, 1 table.

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SUB CODE: 13, 11/ SUBM DATE: 27Dec65/ ORIG REF: 006/ OTH REF: 001

Card 2/2

L 08046-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/WB

SOURCE CODE: UR/0369/66/002/003/0279/0284

ACC NR: AP7001662

KARLASHOV, A. V., GNATYUK, A. D., Kiev Institute of Civil Aviation Engineers (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii) 40

"Corrosion Fatigue Strength of D16AT Sheet Metal Under Asymmetrical Loading" B

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 2, No 3, 1966, pp 279-284

Abstract: The article presents the results of an investigation into the effect of asymmetrical loadings of D16AT clad sheet metal (4.2% Cu, 1.6% Mg, 0.3% Fe, 0.2% Si), 2 mm thick. Tests were performed with the aid of an MPI-2P dynamic loading machine (loading frequency 70 cycles/minute) as well as of a 3% aqueous solution of NaCl simulating the corrosive effect of sea water. It was found that the increase in the mean asymmetric loading level enhances the adverse effect of 3% NaCl on the endurance of this material, while a decrease in this level (application of a lower tensile stress) reduces the adverse effect of NaCl and prolongs the life of specimens. These findings have a bearing on the development of the most suitable airframe materials in aircraft design, considering that, under natural operating conditions, airframe components sustain varying asymmetric loads and are exposed to various aggressive media: atmospheric moisture, sea water, condensate of air-tight cabin, etc., and hence symmetrical loading tests cannot serve as a suitable criterion for determining the corrosion-fatigue strength of airframe materials. Orig. art. has: 4 figures and 4 formulas. [JPRS: 37,603]

TOPIC TAGS: fatigue strength, sheet metal

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